

THURSDAY, DECEMBER 11, 1879

CAMBRIDGE UNIVERSITY

THE draft of the proposed Statutes just issued by the Commissioners, will, if we mistake not, mark an era in the history of one, at all events, of our Universities. It indicates a large and wise view on the part of the Commissioners, and though it will scarcely place Cambridge on a level, so far as teaching power goes, with a second-rate German University, it will go far to remedy the present state of things, and on it a superstructure may in time be laid in true harmony with the wants of the time.

What the Commissioners have really had to do is to convert an assemblage of "Hauts Lycées" into a living University, and, of course, this had to be done, if it were done at all, at the expense of the Colleges. This has long been foreseen, and the way in which it has been approached leaves nothing to be desired, so far as the manner goes; if a minimum only had not been fixed many might have said that the proposal hardly went far enough. The Commissioners evidently have faith. It will be best to give in the first instance an analysis in the words of the Statutes as far as possible.

In order to obtain contributions from Colleges for university purposes, it is ruled that the Colleges shall pay to the University in every year, out of their revenues, a sum determined according to the following quota, viz. :—

For every 1,000*l.* levied,—

Peterhouse	23
Clare	47
Pembroke	47
Gonville and Caius	62
Trinity Hall	33
Corpus Christi	43
King's	126
Queens'	19
St. Catharine's	19
Jesus	57
Christ's	57
St. John's	169
Magdalene	7
Trinity	229
Emmanuel	33
Sidney Sussex	25
Downing	4

This quota, which must have cost somebody a vast amount of trouble, enables any one to judge of the effect of the scheme on any College. Thus, assuming that Peterhouse pays its non-Resident Fellows 230*l.* a year, the sacrifice of two of these will alone be required to enable that College to do its share towards providing 20,000*l.* annually for University purposes.

We mention this because we are sure to hear of the Colleges being crippled, and it is clear that only wooden legs are threatened.

The quota is subject to revision at any time not less than five years after the approval of the Statute by the Queen in Council, and again after intervals of not less than ten years from that or any subsequent revision, the revision at such times being made, on the requisition of any one or more Colleges, by the Chancellor of the University with assistants.

The sum to be contributed by the Colleges in any year from January 1 next after the approval of the Statute by

the Queen in Council to the end of the year 1882 is not to be less than 8,000*l.* nor more than 10,000*l.*; in each of the years 1883, 1884, 1885, and 1886 not less than 12,000*l.* nor more than 15,000*l.*; in each of the years 1887, 1888, 1889, and 1890, not less than 16,000*l.* nor more than 20,000*l.*; in each of the years 1891, 1892, 1893, and 1894, not less than 20,000*l.* nor more than 25,000*l.*; and in every subsequent year not less than 25,000*l.*

The Colleges will not be required to contribute in any year a greater sum than 25,000*l.* without the consent of a majority of votes at a meeting of Representatives of the Colleges called for the purpose of considering the question.

This money contribution, however, is not the only one. Taking advantage of a system which has, it may be said, been suggested by the best of the Colleges themselves, it is ruled that there shall be in every College one or more Fellowships assigned to Professorships, such Fellowships to be called Professorial Fellowships.

The Professor admitted into any Professorship to which a Fellowship is thus assigned shall thereby *ipso facto* vacate any Fellowship he may hold at any College; and he shall have the same privileges, dividend, and emoluments as any other Fellow of the College to which the Professorship is attached. A Professor admitted into any Professorship to which a Fellowship is assigned by this Statute shall *ipso facto* vacate any Mastership he may hold at a College other than that to which the Professorial Fellowship attached to the Professorship is assigned; and if the Professor be admitted to the Mastership of any College other than that to which the Professorship is attached, he shall vacate his Professorship.

If upon the vacancy of any Professorial Fellowship the College declines to elect as Fellow the Professor to whose office the Fellowship is assigned, the Fellowship will remain vacant, its dividend being paid to the University.

A Professor retiring from office after holding it for not less than twenty years, shall be deemed thereafter an Honorary Fellow of the College, enjoying such privileges and advantages as the College may from time to time determine.

The first vacancy in the Fellowships of a College after the election of a Professor to whose office a Fellowship at that College is assigned, is to be appropriated to the Professorship.

The next section of the new Statutes deals with the Financial Board of the rehabilitated University. We need not refer to this here, except to say that the scheme seems wisely drawn and that the Colleges are to be well represented on it.

We next come to the Boards of Studies.

Eleven such Boards are to be constituted for all important departments of study recognised in the University, and are to consist of the Professors hereinafter assigned to such boards severally, together with such Readers, University Lecturers, Examiners, and other persons as may be chosen from time to time by the Senate.

The Boards to be first appointed are for—

Divinity.	Medicine.
Law.	Classics.
Language.	History.
Mathematics.	Moral Science.
Physics and Chemistry.	Music.
Natural Science.	

But with great wisdom, and here it is to be added that the Commissioners have introduced as much elasticity as possible, the University is to have power to vary the number and designation of these Special Boards from time to time on the recommendation of the General Board of Studies, provided that the whole number of such Boards shall never be less than eight.

The Professors assigned to the said eleven Boards are as follows:—

Divinity	... ..	Regius. Lady Margaret's. Hulsean. Norrisian. Ely.
Law	... ..	Regius. Downing. Whewell.
Medicine	... ..	Regius. Downing. Anatomy. Pathology.
Classics	... ..	Regius of Greek. Latin. Regius of Hebrew. Arabic. Sanskrit.
Language	... ..	Anglo-Saxon. Lucasian. Plumian. Lowndean. Sadlerian.
Mathematics	... ..	Jacksonian. Chemistry. Mechanism. Cavendish of Physics. Astronomy and Astronomi- cal Physics.
Physics and Chemistry	... ..	Woodwardian. Botany. Mineralogy. Zoology and Comparative Anatomy. Physiology. Modern History.
Natural Science	... ..	Disney. Thirlwall. Dixie. Knightbridge. Political Economy. Mental Philosophy and Logic.
History	... ..	Music.
Moral Science	... ..
Music	... ..

Power is again given to the University to vary the assignment of Professors to the several Special Boards on the recommendation of the General Board of Studies.

Each Special Board is to consult together from time to time on all matters relating to the studies and examinations of the University in its department, and in consultation with the Professors, Readers, and University Lecturers connected with its department, frame a scheme of lectures in every year; taking care to provide that the subjects of the said lectures be determined with regard to the general objects of every particular Professorship, so as to distribute the several branches of learning in the best manner.

These Special Boards are to be controlled by a General Board of Studies, consisting of the Vice-Chancellor, one member of every Special Board of Studies elected by that Board, and eight members of the Senate.

The duty of the General Board is to consult together

on all matters relating to the studies and examinations of the University, including the maintenance and improvement of existing institutions, and the establishment and maintenance of new institutions.

Among the functions of the General Board are the superintendence of laboratory work and the subordination when necessary of the Readers and University Lecturers to the professors.

Those who know Cambridge at present will have seen in the foregoing lists some new Professorships. As a matter of fact six new Professorships are to be established in the University for the following subjects, viz.:—

Physiology.
Pathology.
Mental Philosophy and Logic.
Astronomical Physics.
History, Thirlwall.
Ecclesiastical History, Dixie.

The Professors in these subjects are to be appointed before the end of the year 1882.

Here again the Commissioners show a wise discretion in ruling that the University shall have power to establish from time to time Professorships for other departments of learning or science. The Professorships so established may either be limited to a definite term of years or to the tenure of office of one Professor only; and if not so limited, they may be suspended or discontinued on the occurrence of any vacancy.

The stipends of the Professors, it is suggested, should be raised from their present level to correspond with the following scheme:—

Professors.			
	£		£
Regius of Law	600	Experimental Physics	750
Whewell	500	Mechanism	400
Regius of Medicine	400	Astronomical Physics	500
Anatomy	300	Woodwardian	500
Pathology	600	Botany	300
Greek	750	Mineralogy	300
Latin	750	Zoology and Compara- tive Anatomy	600
Arabic	500	Physiology	600
Sanskrit	500	Modern History	400
Anglo-Saxon	500	Thirlwall.	
Lucasian	750	Dixie.	
Plumian	750	Knightbridge	400
Lowndean	600	Political Economy	300
Sadlerian	600	Mental Philosophy and Logic	400
Jacksonian	600	Music	200
Chemistry	750		

It must not be forgotten that the above sums are exclusive of the dividend on the Fellowship which is held by each Professor; and, further, the University is given power to vary the stipends from time to time, *provided that no such variation shall affect the interest of a Professor without his consent, or diminish the aggregate amount of payment to the whole body of Professors.* That is to say, the scheme is perfectly elastic, only the Commissioners do not intend to have it improved into effectness.

The actual increase to the Professoriate, it will have been seen, is small; the ultimate increase to the teaching power of the University is, however, great. This is accomplished by the appointment, in connection with the departments of study for which Special Boards of Studies are appointed, of a body of teachers called Readers.

The number of Readers to be appointed is twenty-nine, distributed as follows :—

Divinity	...	...	...	...	2
Law	...	...	...	...	3
Medicine	...	...	...	...	2
Classics	...	...	...	...	4
Language	...	...	...	...	4
Mathematics	...	...	...	...	6
Physics and Chemistry	...	...	...	...	4
Natural Science	...	...	...	...	2
History	...	...	...	...	1
Moral Science	...	...	...	...	2

Of these not less than fourteen are to be appointed before the end of the year 1882, and the rest before the end of the year 1886.

The University may vary the connection of the Readers with the several Special Boards of Studies, and increase their number, upon the recommendation of the General Board of Studies.

The stipend of a Reader is 400*l.* a year, subject to variation by grace of the Senate upon the recommendation of the General Board of Studies, but no such variation shall affect the interest of a Reader without his consent, *or diminish the aggregate amount of payments to the whole body of Readers.*

The University is to have power to give pensions to retiring Readers according to circumstances, as the Senate may think fit.

Another arrangement for increasing the teaching power in the University is the appointment of University lecturers.

The General Board of Studies acting in conjunction with any Special Board may choose as Lecturers in the department of study for which the Special Board is formed such College Lecturers as they may think fit, who are willing, with the concurrence of their respective Colleges, to throw open their lectures to all students of the University.

The Lecturers so chosen are to be called University Lecturers, and each of them shall receive from the University an annual stipend of 50*l.*

No one is to be appointed to this office who does not receive from his College an annual stipend of at least 200*l.* as Lecturer, irrespective of the income of a Fellowship or other College emolument; the office of University Lecturer becomes *ipso facto* vacant if the holder of it ceases to hold the office of College Lecturer or receives from such office a less stipend than 200*l.* a year.

The number of University Lecturers and their connection with the Special Boards of Studies shall be determined from time to time, provided that when fit persons can be found the whole number shall be not less than thirty [one-half to be appointed before the end of the year 1882, and the rest before the end of the year 1884].

There is only one other point of the Statutes which we need analyse on the present occasion; this refers to the duties of Professors and Readers.

It is laid down that it shall be the duty of every Professor and Reader *as well to devote himself to research and the advancement of knowledge in his department as to give lectures in every year.*

It is impossible to estimate the good these words will do to the cause of research in England, where so many of our Professors sink to the level of mere traders. They

should, though perhaps less necessary at Cambridge than elsewhere, be put up in letters of gold on the Senate House.

It will be sufficiently clear from the foregoing that with the great increase of teaching power which the Statutes confer the University should rise phoenix-like from its ashes, and that the present condition of things will be entirely changed.

How Cambridge in the new order of things will stand as compared with other Universities, and the lines along which future work and reforms may run, are questions so interesting that we may return to them and others on a future occasion.

AURORÆ

Aurora: their Characters and Spectra. By J. Rand Capron, F.R.A.S. (London: E. and F. N. Spon, 1879.)

IN Mr. Gore's delightful book on the "Art of Scientific Discovery," it is said that "during the prosecution of an original investigation, the area of question and discovery enlarges as we proceed, and the research in some cases develops into such complexity and magnitude, that solution of its questions appears for a time hopeless. Generally, however, when that discouraging point is attained, the subject begins to clear, and by persistent research is gradually reduced to order, and is found to conform to a few general laws or principles."

The first part of this paragraph is only too apt a description of the present stage of the inquiry into the causes and nature of the Polar aurora. The striking character of the phenomenon itself, its evident connection with electric and magnetic disturbances, its unaccountable spectrum, and the relations which various observers have believed they had detected with solar spots, and coronal rays, are powerful stimulants to scientific curiosity. But so far the most painstaking researches have failed to seize the connecting link which should unite these various aspects into one organic whole; and we can only hope that the concluding sentence which we have quoted may be a prophesy of ultimate success. Under such circumstances Mr. Capron has done good service to science by collecting in a compact form the whole information which we possess on the subject, for it is only by careful study of what is already known that we can decide on the point of attack which gives the best hope of further conquest.

The first four chapters of the book are taken up with descriptions of specific auroræ. Among these we are sorry to miss a fuller account of the careful and accurate observations made by Lieut. Weyprecht during the Austrian Arctic Expedition of 1872-4. His description of arctic auroræ, as quoted from Payer's "New Lands Within the Arctic Circle," is exceedingly graphic and picturesque, but the original paper¹ as read before the Imperial Austrian Academy of Science, with its accurate classification of auroral forms, seems to have escaped the author's notice, as it is not even named in the list of papers in the appendix.

In Chapter V. the question of sound produced by the northern lights is discussed with the result that the balance of evidence is against it. Upon the height of

¹ "Die Nordlichtbeobachtungen der österreichisch-ungarischen arctischen Expedition 1872-74," von Carl Weyprecht, vorgelesen 17 Mai, 1877.